United States Treasury

&

National Bank Note Detector

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CONTENTS.

PAGE

INTRODUCTION 5

A FEW HINTS TO AID IN DETECTING COUNTERFEIT MONEY. BY GEORGE W. CASILEAR OF THE UNITED STATES TREASURY DEPARTMENT 9

CHAPTER I.

PROCESS OF ENGRAVING AND PRINTING BANK NOTES 15

CHAPTER II.

ART OF DETECTING COUNTERFEITS, WITH RULES FOR GENERAL GUIDANCE . . 19

CHAPTER III.

GENUINE BANK NOTES 25

CHAPTER IV.

COUNTERFEIT BANK NOTES 29

CHAPTER V.

ALTERED BANK NOTES 33

CHAPTER VI.

DESCRIPTION OF UNITED STATES TREASURY AND NATIONAL BANK NOTES . . 34

CHAPTER VII.

A BRIEF DESCRIPTION OF THE NATIONAL CURRENCY BACKS 39

INTRODUCTION TO THE THIRTEENTH EDITION.

The United States Government Counterfeit Detector AT SIGHT has maintained an undiminished reputation from the time of its first publication to the present day, and there is no other work to compare with it for simplicity of arrangement and fidelity of description of both genuine and counterfeit Bank Notes and Bonds. In presenting this new and thirteenth edition of the Counterfeit Detector, we have carefully revised the text, eliminating all superfluous matter and substituting therefor what new facts we have been able to obtain in relation to the detection of counterfeits since the revision of our eleventh edition.

We find, notwithstanding the U. S. Government employ in the engraving and printing bureaus of the Treasury Department the best talent of the country, and have spent hundreds of thousands in machinery for the purpose of perfecting the art of engraving and printing, and have been untiring in devising methods whereby to prevent the great flood of counterfeiting, that the counterfeiter has been equally as diligent in his efforts to perfect the art of counterfeiting, which has made such rapid progress that the country, especially South and West, is flooded with counterfeit Greenbacks and National Bank Notes, of such superior workmanship that one must need be an expert to prevent imposition. Being aware of this fact, and feeling that a safeguard for the better protection of the public against the devices of the counterfeiter was necessary, we resolved to revise the text of the Detector, and to embellish it with new plates of genuine work printed from the original dies. Consequently we petitioned the Treasury Department, asking the privilege of using sectional portions of the new issues of the Greenbacks and National Bank Notes, with

which to illustrate the new edition of the Detector. To accomplish this object we have spared neither time nor money; and we are pleased to say that, after due consideration, and for the better protection of the public, the Treasury Department granted our petition, reserving, however, the right of such mutilation as in their best judgment would be a safe protection against the counterfeiter's nefarious art. (See the line of mutilation across the face of each sectional portion of Bank Notes illustrating this work.) We are thereby enabled to furnish these sections in two convenient book-forms. — one for banking and counting houses, and the other as a pocket edition. This will enable the student at all times to have before him the genuine work, from clear and distinct impressions, of United States and National Bank Notes, with the method of detecting counterfeits adopted and invariably observed by *engravers*, treasury officers, bankers, and other experts, and which can be kept constantly at hand for ready and permanent reference, and for facilitating the instruction of clerks and beginners.

We have illustrated this edition with two-thirds of the face of the entire note of the United States Greenbacks (new issue), left-hand end of the following denominations, viz.: One, Two, Five, Ten, Twenty, Fifty, One Hundred, Five Hundred and One Thousand. Also, the series of the National Bank Notes, viz.: left-hand end of the One, Two, Five, Ten, Twenty, Fifty, One Hundred, Five Hundred and One Thousand. For the convenience of students and others, we have caused to be printed United States notes and national currency of the same denomination on the same plate, thereby enabling them, when they wish to compare the counterfeit with the genuine, to refer to either the United States Greenback or the national currency at one and the same time, giving the most beautiful devices and best work of the government. These devices, with the rules for detecting counterfeits, are considered the only reliable safeguard against the nefarious designs and ingenuity of counterfeiters.

Before closing the introduction, we cannot refrain from tendering our acknowledgments to the officers connected with the United States Treasury

Department, as well as to many others who cheerfully rendered us their valuable assistance in the consummation of our enterprise, and especially to Hon. Lot M. Morrill, Secretary of the U. S. Treasury; Hon. Charles F. Conant, Assistant Secretary of the Treasury; Hon. A. H. Cragin, United States Senator; H. C. Jewell, Esq., Chief of the Engraving and Printing Bureau; George W. Casilear, Esq., Superintendent of the Engraving Bureau; George B. McCartee, Esq., Ex-Chief of Engraving and Printing; Elmer Washburn, Chief of the United States Secret Service Division. Also Charles B. Hall, Esq., Cashier of the Boston National Bank and Secretary of the Association of Banks for the Suppression of Counterfeiting.

THE AUTHOR.

A FEW HINTS TO AID IN DETECTING COUNTERFEIT MONEY

By George W. Casilear,

Of the United States Treasury Department.

No safeguard to prevent counterfeiting paper money that human ingenuity can devise is entirely beyond the counterfeiter's skill, as it is a well-known axiom that what one man can produce, another can imitate. The talent of American engravers had in the middle part of the present century a splendid field for development, in the work of preparing the issues of the innumerable number of State banks throughout the country; and on the superiority of the engraved work, of the portraits, vignettes, and other embellishments of lathe work, rather than of the paper used, rested the main reliance for the prevention of successful counterfeiting. Notwithstanding the superiority of the engraved work and the difficulty of counterfeiting it, excellent counterfeits of those issues were put upon the country; and when the rebellion broke out, to meet the emergency the government was required to issue vast amounts of paper money, in lieu of the gold and silver which had disappeared like magic; no opportunity was afforded to test methods which had either been suggested, if not attempted, for the better security of paper money from the base and ignoble arts of the counterfeiter. The use of plain, commercial bank-note paper by the government at this period was unavoidable; but it was the cause of serious annoyance to the department, by reason of the equal facilities the counter-

feiter had in obtaining the same paper, and the consequence of innumerable counterfeits appearing on the old greenback issue.

Upon Mr. Boutwell's elevation to office as Secretary of the Treasury, one of his first official acts was to have the whole issue of the greenback series re-engraved, and to obtain the exclusive control by the government of a special distinctive paper, to be used solely in the preparation of its securities. After a long series of experiments of various papers a peculiar-featured paper was adopted by the department, and the result has been satisfactory.

The use of a special paper for printing money is invaluable, as it adds greatly to the embarrassment of the counterfeiter to be compelled to take into his confidence a paper-maker, or, on the other hand, to manufacture in secresey a paper in imitation of that used by the government.

The distinctive or special character of the paper so adopted and used by the government for the present issue of legal tenders or "greenbacks," for the national currency (series of 1875) notes, and for the funded-loan-bonds, is comprised in a narrow localized line of short blue fibre, running along the entire sheet in such a manner as not to lessen its strength nor to interfere seriously with the printing. In this paper and in the system adopted by the department, to prevent its falling into improper hands, lies one of the great safeguards for the security of the issues of the government. In the event of this paper being dangerously imitated, or of a large quantity getting into improper hands through some accident or conspiracy, the government will, no doubt, in accordance with usage, at once adopt another kind, and

replace the present issues by an issue printed on paper with a new feature. The present series of greenbacks have been in circulation since 1869, and, owing to the peculiar features of the paper, the excellence of the designs and the superiority of the engraved work, has had but two of its denominations counterfeited, — the $50 and $500, which have been replaced by new issues, — a fact unprecedented in the history of bank-note engraving and of preparing and printing money issues.

To become an expert in detecting counterfeit money at sight, a thorough understanding of the fundamental principles of engraving is necessary, and this knowledge, in the absence of facilities to learn the art practically, can best be acquired by a studied comparison of the various parts of an unquestionably good note with such notes of a questionable character as may, from time to time, come into one's possession. No note should be permitted to pass without close examination ; nothing should be left to chance. The vignettes, the large and small lettering, the counters or figures engraved upon geometrical lathe work — as well as the apparently trifling details of minute embellishment — should be carefully studied, and the result will be an accurate knowledge that will enable one to immediately detect, on presentation, any irregularity.

A knowledge of the pictorial art can thus be gained, — as to how, by series of well-defined, symmetrical lines, different objects and forms, each having an individuality and peculiarity of its own, are represented with remarkable accuracy. The deviation in the texture of the lines, their curves and

breadths, their lights and shades, will be found to be not the results of chance, but of hard and patient study and labor. The greatest judgment, skill and care are necessary in the formation of the various lines, in the gradation of tones and tints representing drapery, flesh, foliage, sky and distances, all requiring the greatest lightness of touch and freedom of hand in the engraver. By the study and close comparison of genuine with spurious money, much valuable and practicable information can be acquired, — information which will never be forgotten, and be a source of greatest satisfaction in the ability to better appreciate the beautiful and valuable art of engraving, and to enjoy the work of artists of the present and of the past, of the highest grade of talent, whether it be the portraits on the wall, the illustration of a volume, or the bank note. The lettering forming the imprints of the engravers' names, or the small letters or figures generally found in the borders of bank notes, are most excellent points in detecting counterfeit money ; small roman letters in particular are very difficult to engrave, even by the most expert engravers, as the correct drawing of the letters, the handling and the manipulation of the graver, requires masterly talent and patience. In this counterfeiters invariably fail in producing anything above mediocrity upon their most successful imitations.

Lathe work, or the denomination counters, as they are termed on bank notes, are very difficult to counterfeit, and those found upon forged paper are invariably cut by hand, while that which appears on genuine notes is produced by the geometrical lathe, a machine of the most ingenious construction. By examining this class of work with a micro-

scope, the lathe work will be found to be made of curious and complex figures, formed by a series of white lines crossing one another, making an infinite number of black lines and dots of triangular, circular, square or hexagonal shapes, as the case may be, grouped together with beautiful and brilliant kaleidoscopic effects into a variety of combinations of lights, middle-tints and shadows, blending and contrasting the tints so as to make each form appear to the greatest advantage, at the same time contributing to the richness, the brilliancy and the harmony of the whole design. Should the counterfeiter even have access to one of these lathes, it would be of no practical value to him, as by the slightest touch of a screw the whole combination and the essential features of the pattern are changed; hence no one of the innumerable number of various and intricate geometrical tracings capable of being produced can ever be duplicated, even by the operator, unless an accurate register is kept of each movement of the machine while engaged upon such design. The representation of lathe work on counterfeit bills always has a stippled or dotted appearance, caused by the manner in which it is cut or picked by the engraver; the intersecting lines produced in this manner are irregular and ragged in appearance, and have a spotty and confused look, which, by an intelligent and attentive examination, can readily be detected.

To attempt more than giving a few practical hints to those who are already versed in handling bonds and bank notes would require a more minute investigation of this interesting subject, and would extend far beyond the limits of this brief article.

UNITED STATES GOVERNMENT

COUNTERFEIT DETECTOR.

CHAPTER I.

Process of Engraving and Printing Bank Notes, etc.

When an engraver takes in hand a subject, either a Vignette or Portrait, he has it reduced by the camera to the proper size he wishes to engrave it; he then makes a tracing of the same by placing over the reduction or drawing a piece of gelatine; he then traces an outline of the subject with a fine etching tool, slightly scratching the gelatine. After the tracing is complete, he fills the lines of the same with red chalk, and then selects a piece of properly prepared steel, of the required size and thickness, and lays upon the polished surface an etching ground, composed of asphaltum, burgundy-pitch and beeswax, which is applied by rubbing and dabbing over the heated die until it lies smooth over the surface of the steel. He then smokes the same over a jet of gas, or a wax taper, until the surface is quite black. After the die cools it is ready for receiving the tracing, which is placed upon the die reversed, and submitted to the pressure of the roller press. The gelatine is then removed, and the outline, as traced in red, will be observed on the ground. The engraver then proceeds

with his etching needle or point, and etches the water or landscape, outlining the figures, etc.; this is done by scratching the surface of the steel through the composition or ground. After the etching is completed a border of beeswax and pitch is closed around the etching, and a solution of nitric acid and water, or other acids used for corroding steel, is poured on the die. The acid attacks the steel through the etched lines, or where the metal is exposed by the removal of the ground with the point. After the action of a few minutes with the acid the same is removed, and, if the biting is of the required depth for the lighter work, the same is stopped out with a varnish composed of asphaltum and turpentine; and for the parts which are to be made darker the process is renewed until the required depth of line is obtained, when the composition is removed by turpentine, and the work is finished by the graver, which is employed exclusively for cutting in the drapery and flesh and all the small details.

The principal tools or instruments used by the engraver are the scraper, burnisher, etching point, eye-glass, square and lozenge gravers, the ruling machine for ruling parallel lines for water, sky, and uniform tints, and the geometrical lathe. The ruling machine carries a diamond point, which cuts through the etching ground with great delicacy and evenness of tint. After the die is thus finished, it is proved, and then is ready for the hardening process.

The hardening or recarbonization of the die is effected by inclosing the same in a small crucible, or iron box, a trifle larger than the size of the die to be hardened, with the interstices filled with animal carbon made of ivory black or bone, and then heating the whole to a white heat, proportionate

to the character of the steel, after which the die is withdrawn from the fire and plunged into cold water. This carbonization or tempering renders the die ready for the Transfer Process. For this purpose, a soft roller of about two and a half inches in diameter, of decarbonized steel, is placed upon the die, and then submitted to a strong pressure of the Transfer Press, with a forward and backward motion, so as to force the soft steel of the roll into the engraved lines of the subject on the die, so that the impression of the engraving is seen upon the roll in relievo. The roll or cylinder is then hardened in its turn and used in the same manner upon the surface of a decarbonated steel plate. The result is a perfect copy of the original die, showing the finest touch of the graver. Thus, from a single engraving an infinity of transfers can be made, and can be readily repeated, in a perfect manner, with but little extra cost, after the first expense of the original engraving. This art is peculiarly adapted to Bank Notes, Bonds, Checks, etc., as, by a series of rolls composed of vignettes, scroll-work and lettering, they can be used in making several copies on one plate, or series of plates, with perfect identity. The plates thus made are then cleaned by scraping and burnishing away any uneven surface thrown up by the great pressure of the roll, and are ready for the roller printing press.

The printing process is as follows: the plate being duly rolled in with ink made of linseed oil and Frankfort black, the surplus ink is then carefully removed, only charging with ink the engraved lines in the plate; here the printer must use some precaution, and have some appreciation of the nature of the work in hand. He can considerably vary the relative

shade of the component parts, and can control the general tone and shades of the vignettes and heads by carefully keeping the lines and shades clear in his management of wiping the plate. Thus, with skilful hands, the printer is made to co-operate with the engraver in producing a good effect from the work. The plate is then laid upon the plank of the press, and a sheet of moist paper is laid upon its face, and the same is drawn with a strong pressure between the roller, which is covered with blankets, and the plank, by means of cross-arms attached to the press. Thus the paper takes up the ink perfectly from the engraved lines on the plate.

CHAPTER II.

Art of Detecting Counterfeits, with Rules for General Guidance.

The art of detecting counterfeits consists *in becoming thoroughly familiar with genuine work, and in bringing any new or untested bond or note to a critical comparison with a plate known to be genuine.* It will be seen that this method is precisely the opposite of the old system, which made the counterfeit the basis of investigation, and which was consequently always at the mercy of any new or unfamiliar deception; for, under that system, the counterfeit must be learned before it could be detected, while by this method, as illustrated by this work, an accurate knowledge of the genuine, once obtained, renders any subsequent imposition impossible, except through indifference and neglect.

The following description of the various styles of Bank Note engraving, noting the variations therefrom as observed in counterfeits, and indicating the proper method of discriminating between counterfeit and genuine work, is commended to the careful study of all who desire to become familiar with the art of detecting counterfeits. And the student is advised that a casual or superficial reading of these pages is not sufficient to make him at once a master of this art. He must, by

close analysis of, and careful and repeated reference to, these explanations and directions, familiarize his mind with the facts and principles here stated, and, by frequent examinations and comparison of these plates, and of the various devices and sections of Bank Notes, educate his eye to an exact knowledge of the constituent elements of genuine work. In the examination of plates, Bank Notes and Bonds, the microscope should be invariably used until the eye has become sufficiently experienced to dispense with this important aid.

The devices upon Bank Notes consist of vignettes, scrolls, borders, counters, corners, marine views, war scenes, etc. On genuine plates these devices are perfectly formed and symmetrically grouped. Such, however, is not the case in counterfeits; and no matter how near counterfeit work may approximate to the genuine, a close observer, with an ordinary microscope, and with the illustrations in this work from the genuine plates before him, may at once detect the imperfections and irregularities which distinguish the counterfeit from the genuine.

VIGNETTES.

The figures and likenesses, which form the principal characteristics in vignettes, are drawn in accordance with a certain ideal standard of perfection. Female figures are generally represented with the arms, neck and feet bare, and their accuracy of proportion, and the delicacy of the work, are important guides in determining the genuineness of the plates. The texture of the skin is represented by fine dots and lines, an admixture of styles of engraving which is to be found in all vignettes, and the fineness and regularity of these

dots and lines indicate the quality and reliability of the work. In the human figure, upon genuine plates, the eye, mouth, hair and attitude are perfectly natural, and the features are always sharp and striking. In counterfeits the features are usually blurred and expressionless, the eye is dull, the arms, feet and hair imperfect, and the dots and lines which form the face and the exposed portions of the person are large, coarse and uneven. A careful study of vignettes is recommended to all who desire to become experts in the art of detecting counterfeits.

See the exquisitely executed vignettes on the $1, $2, $5, $10, $20, $50, $100, $500 and $1000 United States Notes, also on the $1, $2, $5, $10, $20, $50, $100, $500 and $1000 National Currency.

THE ROUND HAND.

This form of lettering is observed in the legend on the Bank Notes (which is the same in all), and in the words "Will pay the bearer." The curves and hair lines are drawn with positive accuracy. There may be a difference in the style of letter, but this will not change the precision of the work, as may be seen by comparing the curves and lines of one with those of another. This precision is never attained in counterfeits, as the microscope will disclose. For genuine specimens see any issue of Bank Notes in the illustrations which accompany this work.

PARALLEL RULING.

The shading of letters and all parallel ruling upon Bank Notes is executed by the Parallel Ruling Machine. This

machine is governed by an index which regulates the width of the lines. On all genuine notes the work is fine and clear, and the lines are strictly parallel. It is executed with such mathematical accuracy that, by the aid of the microscope, the lines are seen to be perfect, and, however minute, can be easily counted. Clear skies are also usually formed of fine parallel lines. When cloudy or heavy skies are required, these lines are made to cross each other. Sometimes sky is formed of several broken etched lines. Great care should be taken to learn, by an examination of the plates, which portion of such work upon the genuine notes is done by etching, and which by parallel ruling. Parallel ruling is a very important branch of engraving, and one which cannot be too attentively studied. For specimen of genuine work, see parallel ruling on the lower side of the $1, $10, $50 and $500 United States Greenback. See also the shading of letters on all other plates. In counterfeits this work is usually coarse and imperfect, and the lines are seldom parallel. In endeavoring to count them they will be found broken, of irregular thickness, and lacking uniformity. Observe closely, in the genuine plates, the shading of letters and all other parallel lines.

GEOMETRICAL LATHE WORK.

The lathe work upon Bank Notes is executed by the Geometrical Lathe, a machine which no counterfeiter can have opportunity, if he have the means, to properly construct or perfectly operate. By the simple turning of a screw, patterns are arbitrarily formed upon the die, comprising many variegated and beautiful combinations of geometrical figures,

mathematically true to each other. This engraving can be made intricate at will, by certain peculiar manipulations, creating at every movement of the machine an intermingling of elaborate figures of design and finish which can never be exactly reproduced by the operator a second time. Lathe work is, therefore, the chief feature in note-engraving. It is found in all the government issues of notes, from the three-cent scrip up to the highest denomination of Bank Notes or Bonds issued by the government.

The borders, corners, denomination counters, and all oval and circular forms upon the Bank Notes are formed by the Geometrical Lathe. Notwithstanding the difficulties attending a successful counterfeiting of lathe work, there has been such work executed; and, so well and elaborately was this work performed that additional precautions against deception have been felt to be necessary. Not only must the general clearness, exactness and finish of the genuine work be studied, but it is also essentially requisite that the peculiar formations of the lathe engraving upon any particular genuine note be thoroughly learned, as each plate and figure has its own special and characteristic features.

In examining lathe work for proof of genuineness, begin at the centre of the curvilinear figures, and then gradually follow the lines around the circles, one within the other, for the discovery of special defects which would otherwise be overlooked; also be careful and minute in comparing general designs.

For illustration, see the excellent counterfeit five-dollar note on the Traders' National Bank of Chicago, which made its appearance in the West a few months ago, having a large

circulation. The engraving on this note is admitted to be superior in many respects to the original, and is liable to deceive the most skilful experts. Through the vigilance of Elmer Washburn, Chief of the Secret Service, the counterfeiters of this issue were arrested, their plates, presses and stock in trade captured; and yet upwards of $200,000 of this counterfeit paper is in circulation among the business community.

CHAPTER III.

Genuine Bank Notes.

It is incorrect to suppose that it is necessary to become familiar with the work on counterfeit Bank Notes to enable the student to determine what is genuine or counterfeit. This method of detecting (which was the old one) would make it necessary to see every denomination of counterfeits issued, from the fact that no two counterfeits of different denominations are alike. This is not so with genuine Bank Notes, they being alike in all the principal parts that go to determine the genuine from the counterfeit. Therefore, if the student becomes *thoroughly* familiar with what constitutes a genuine Bank Note, he will readily detect at sight a counterfeit of any denomination.

PAPER.

The paper used by the government for Bonds and Bank Notes is possessed of a substantial body, has a fine finish, and presents to the eye a fibrous surface. When examined with a microscope these fibres have the appearance of coarse black hairs, of all conceivable lengths and shapes, scattered promiscuously, regardless of regularity, over the entire surface of the bond or note. A narrow strip of bluish color,

termed "localized tint," extends across the entire note, and is the result of a second process. This paper is known as the Wilcox fibre, and presents a serious obstacle for counterfeiters to overcome.

INK.

The ink used by the United States Treasury Printing Bureau, and all Bank Note Companies, is manufactured expressly for printing Bonds and Bank Notes. It is jet black, and at first has a glossy appearance; the gloss, however, in time evaporates, yet the ink always retains its original and rich jet-black appearance, never assuming that rusty brown generally observed on counterfeits. The same may be said of the red ink in which the figures, letters and seal are printed on the face of the note. It always retains the original color, in no case turning to a wood-red color, as is the case with the red ink used on counterfeits.

PRESIDENT'S AND CASHIER'S SIGNATURES.

The president's and cashier's signatures present a striking individuality, which counterfeits, no matter how well executed, never possess. The genuine signatures, written with naturalness and ease, are free from that forced and cramped appearance always discernible in the counterfeit.

VIGNETTES.

The vignettes on all Bonds and Bank Notes are engraved by the best artists in the country, and no pains are spared in

bringing them to the highest state of perfection the mind can imagine. They are always noticeable for their superior workmanship, exquisite beauty and finish. In the vignettes the counterfeiter finds an obstacle not easily overcome, and seldom, if ever, succeeds in producing one that will not betray its base origin.

THE HUMAN FIGURE.

Portraits, male or female, are executed in the most artistic manner; the features being admirably engraved. The texture of the skin is composed of stipple work and lines intermingled. The stipple work, or dots, generally denote the parts on which the light falls, as may be seen by referring to the female portrait on the fifty-dollar Greenback. The lines represent the parts that are slightly shaded, as may also be seen on the same portrait.

The hair is tastefully and naturally arranged, and plainly denotes it is the work of an artist. When examined with a microscope, it will be observed that it is not a mere daub, as if made with a brush, but has a light and wavy appearance, looking perfectly natural.

The eyes are the most important feature of the portrait, and must necessarily be filled with animation, in order to give to the portrait an expression of naturalness. The pupil is, invariably, distinctly visible, showing the white clearly, thereby giving to the countenance a life-like appearance.

The nose, mouth, chin and neck are also engraved with a degree of perfection that is never found in counterfeits. The shape of the neck is displayed by the delicate shading. The

arms possess a graceful sphericity. The fingers are natural, and display a life-like sense of touch. The drapery is gracefully arranged, and is composed of heavy and fine lines, — the heavy lines denoting the coarser drapery, and the fine lines, that which has a gossamer-like appearance.

CHAPTER IV.

Counterfeit Bank Notes.

Herewith we present a few of the principal points which determine counterfeit Bank Notes.

PAPER.

The paper on which counterfeit Bank Notes are printed is generally of a pale-gray color, soft and flimsy to the touch, and wanting the beautiful finish of that used by the government for genuine notes.

Counterfeiters succeeded, however, in producing an article so nearly like the genuine that the government deemed it expedient to have a paper manufactured expressly on which to print Bonds, Bank Notes and Scrip, the result of which was the invention and manufacture of the paper known as the Wilcox fibre, now used exclusively by the government.

It was thought this would baffle the ingenuity of the counterfeiters, — and it did for a time; but these brilliant geniuses have overcome *this* difficulty to a great extent in the production of a paper in good imitation of the Wilcox fibre, so that it becomes necessary even for connoisseurs in the art of detecting counterfeits to be on the alert.

INK.

The ink used is generally of an inferior quality, lacking both the body and the rich brilliancy of the genuine, and in a short time assumes a grayish appearance. The letters, figures and characters printed in red soon change to a pale wood-red, instead of retaining the brilliant carmine color like that used by the treasury department.

PRINTING.

It will be observed the printing, when compared with the genuine, is poorly executed, having a coarse and blurred appearance, and especially when examined with a microscope.

SIGNATURES.

The president's and cashier's signatures can be detected in many cases by their forced, cramped and coarse appearance. For illustration, take the characteristic and bold signature of General Spinner on the greenbacks, on which there have been some excellent counterfeits; yet they lack the grace, ease and finish of the original, and can easily be detected by experts.

PARALLEL RULING.

The parallel ruling used for shading the letters and backs is invariably imperfect; the lines are coarse and broken, and when subjected to a microscopical examination present a ragged and blurred appearance, and are seldom parallel.

GEOMETRICAL LATHE WORK.

Counterfeit lathe work can be detected by the blurred and dotted appearance of the lines where they intersect each other. These defects, which might be overlooked, can easily be detected by beginning in the centre of the curvilinear figures, and gradually following around the circles. On many counterfeits actual work of the lathe is to be found, the figures being made up of small circles, which would readily be detected by an educated eye.

PRINCIPAL FIGURE.

The object of the counterfeiter is to make the principal figure in the vignette the most attractive, and therefore he gives it the best finish, and brings it nearer to a state of perfection, knowing, if he accomplishes this point, the surrounding imperfections will not so readily be observed, which is true. With this idea deeply impressed upon his mind, he becomes so absorbed in what he considers the principal feature of the note, that he neglects those minor points that invariably add grace and beauty, and give to the note an exquisite finish.

THE HUMAN FIGURE.

In a counterfeit the hair is coarse, and not artistically arranged. The eyes are always imperfect, having a blurred and expressionless appearance. The arms, hands and feet are invariably poorly drawn. The dotted lines or stipple work denoting the flesh are coarser and darker. The shaded sides

of the arms and legs are generally very dark. The fingers and toes are coarse and clumsy, seldom fully developed, and oftentimes drawn to a point, in both cases lacking the animation of the genuine. The drapery is slovenly arranged, and has an untidy appearance, whilst on the genuine it is artistically and gracefully arranged on the figure.

In conclusion, however, we must add, that counterfeiters have made such rapid strides in the art of counterfeiting on all these points, even experts are oftentimes deceived, unless they subject the counterfeit Bank Note to a microscopical examination.

CHAPTER V.

Altered Bank Notes.

Altered Bank Notes, or raising a smaller to a higher denomination, is not as extensively practised now as during the circulation of the old system of State Bank Notes. However, the practice has not become obsolete, for we occasionally find them in circulation.

An altered Bank Note can be instantly detected by any one familiar with genuine engraving, in consequence of the striking contrast between the genuine portion of the note and the counterfeit portion substituted. The counters are generally extracted and counterfeits printed in their places, which will be perceived at a glance, on account of their miserable execution. The letters and figures are poorly engraved, and their outline coarse and imperfect.

Sometimes counters torn from genuine notes are substituted for those extracted. This is done by what is termed the pasting process. These alterations can readily be detected by holding the note to the light, which will at once disclose the parts pasted on.

CHAPTER VI.

Description of United States Treasury and National Bank Notes.

Of the vast number of persons that are constantly handling the paper currency of our country, but few are familiar with the portraits, scenes and the various designs with which it is embellished. Being constantly in receipt of letters making inquiries relative to these points, and for the benefit of those desiring such information, we herewith append a description of the Greenbacks and National Bank Notes used to illustrate the Banking and Counting House edition of "HEATH'S INFALLIBLE COUNTERFEIT DETECTOR AT SIGHT."

PLATE I.

Plate one represents One Dollar Greenback and National Bank Note.

In the centre of Greenback is a portrait of George Washington, in oval form; on left end is vignette representing discovery of the new land, Columbus being the principal of a group of figures on the quarter-deck of the Caravel.

On the National will be observed a vignette representing two females clasping right hands before an altar, which is

designed to convey the idea of the Union re-established over the Altar of our Country, by the return of Peace and the aid of Heaven.

PLATE II.

Plate two represents Two Dollar Greenback and National Bank Note.

On Greenback, in an oval, with a scroll border, is a portrait of Thomas Jefferson. In centre is vignette of east front of Capitol.

The vignette on the National Bank Note is a female, representing America, seated on a parapet, unfurling an American flag, surmounted by a wreath, a ship, and buildings in background, with thirteen stars in firmament.

PLATE III.

Plate three represents Five Dollar Greenback and National Bank Note.

On the lower corner of the Greenback is a portrait of Andrew Jackson; in centre of note is a vignette, Frontier Life; the principal figure is in the attitude of alarm, and seems to be reaching with the right hand for a gun lying beside him; the excited female, having an infant in her arms, and the watchful dog, indicate that their peace has been disturbed.

On the National, the vignette represents the discovery of the new land, Columbus being the principal of a group of figures on the deck of the Caravel.

PLATE IV.

Plate four represents Ten Dollar Greenback and National Bank Note.

On the lower corner of Greenback is an admirably engraved portrait of Daniel Webster.

The vignette on National Bank Note represents Franklin, with kite in hand, experimenting with electricity, with his assistant seated on a rock near him; Leyden jar in the foreground, and 1752 in lower left corner.

PLATE V.

Plate five represents Twenty Dollar Greenback and National Bank Note.

On the Greenback, in ornamental oval frame, is portrait of Alexander Hamilton; above is "Series of 1875."

On National Note is a vignette representing battle at Lexington, 1775.

PLATE VI.

Plate six represents Fifty Dollar Greenback and National Bank Note.

On the Greenback is vignette of Benjamin Franklin, in oval frame; above it, "Act of March 3d, 1863."

On the National is vignette of Washington Crossing the Delaware; above this is large "50," crowned by "Fifty," in ornamental letters.

PLATE VII.

Plate seven represents One Hundred Dollar Greenback and National Bank Note.

On Greenback is vignette, the best likeness extant of the lamented Abraham Lincoln.

On the National Note is a vignette representing Commodore Perry leaving his flag-ship Lawrence; above is a large ornamented "C," and "100."

PLATE VIII.

Plate eight represents Five Hundred Dollar Greenback and National Bank Note.

On the Greenback the vignette represents Victory. She stands passive, divested of armor — holding in her right hand the palm of victory; in the other hand the laurelled crown. Broken arms and implements of war are strewn around her, and the dark clouds of battle are swiftly passing away.

On the National is vignette, female crowned with stars, sitting upon a cannon, sword and anchor resting upon same; charts, compass, etc., in foreground, with ship and camp in background, with the bow of promise in the heavens and eagle soaring overhead; and is designed to represent the Genius of the American Navy

PLATE IX.

Plate nine represents One Thousand Dollar Greenback and National Bank Note.

On Greenback is a portrait of Dewitt Clinton, ex-Governor of the State of New York, to whom we owe the great Erie Canal. On left side is vignette representing Columbus dreaming of the supposed land beyond the great Atlantic; globes, charts, etc., surround him.

On the National is vignette representing Gen. Scott, at the head of the army, entering the City of Mexico.

NUMBERS ON BANK NOTES.

The top number on the right-hand side of the note is the serial number put on by the Government. The number on the lower part of the note (left side) is the serial number of issue by the Bank. The large number on each end of the note is the charter number of the Bank and series of 1875, and denotes when the printing of the faces was transferred from the Bank Note Companies in New York to Washington, or to the Bureau of Engraving and Printing.

CHAPTER VII.

A Brief Description of the National Currency Backs.

(See Plates 10 and 11.)

The reverses of all the several denominations of the National Currency notes are ornamented right-angled parallelograms, or oblong squares, printed in green, enclosing in the centre of each a vignette printed in black, bearing the illustration of some memorable event in the history of the United States, several of which are engraved from paintings now in the Capitol at Washington. On the right end of the note is an eagle, the device of the United States; and on the left the coat-of-arms of the State to which said note is appropriated; also on the ends will be observed the denomination thereof enclosed in lathe work, and the legend arranged on tablets composed of small lettering, giving the legal value of their issue; the commercial uses for which they are intended; also the warning to counterfeiters in passing any counterfeits, or altering the denominations, or imitating the paper on which the note is printed, with the penalty for the same.

$2 REVERSE VIGNETTE

Represents Sir Walter Raleigh introducing Indian corn and the tobacco-plant in England in 1585.

The use of the latter he exhibits in smoking an ornamented Indian pipe before an assembly of lords. It is

related that the page, carrying in refreshments at that moment, was so frightened at seeing the clouds of smoke issuing from Sir Walter's mouth that he retreated, dropping the wine and goblets, to the great merriment of the company.

$5 REVERSE VIGNETTE.

The illustration on the note represents the Landing of Columbus in the year 1492, after a painting by the American artist, John Vanderlyn.

$10 REVERSE VIGNETTE

Represents the Discovery of the Mississippi, in 1541, by De Soto. The explorer is mounted on a charger, followed by horsemen and trumpeters; the terrified natives offer no resistance, having deposited their arms on the ground, and appear anxious to conciliate the invaders. In the foreground is an assemblage of soldiers, adventurers and monks, one of whom is seemingly engaged in blessing a crucifix in process of erection.

$20 REVERSE.

This engraving represents the Baptism of Pocahontas in the presence of the notables of Jamestown, Va. The Indian maid is kneeling near the fount; the lover, John Smith, occupies a conspicuous position in the centre of the picture; a group of Indians in the foreground expressing the mingled emotions of pride, surprise, and interest, while one sits down in the stolid indifference of his race.

$50 REVERSE.

The historical illustration on this note is the "Embarkation of the Pilgrims," painted by Weir. Their first act being

to invoke the Divine blessing on their enterprise of seeking a new home for the free exercise of religious liberty, the open book indicates that some part of the Scripture has been read; the stern warrior bends the knee, and mingles his supplications with those of a goodly company of valiant youths and ladies fair, and matrons, one of whom is seen in the background encouraging her offspring to join in the solemnities of the occasion, while the busy crew are seen carrying out the necessary preparations for a long voyage.

$100 REVERSE.

The day of the birth of a nation, July 4th, 1776, taken from a picture painted by Trumbull, is too extensively known to need a lengthy description. A committee of illustrious men are presenting, for acceptance, approval, and signing, the manuscripts of the Declaration of American Independence; fifty more dignified or intelligent-looking gentlemen did never, at any time, adorn a council-chamber.

$500 REVERSE.

This engraving represents the Surrender of General Burgoyne to the American Army of the North, commanded by General Gates, October 17th, 1777, at Saratoga, New York.

$1000 REVERSE

Represents Washington Resigning his Commission, December 23d, 1783, as commander-in-chief of the United States Army, to the Congress assembled at Annapolis, Md.

UNITED STATES NOTE

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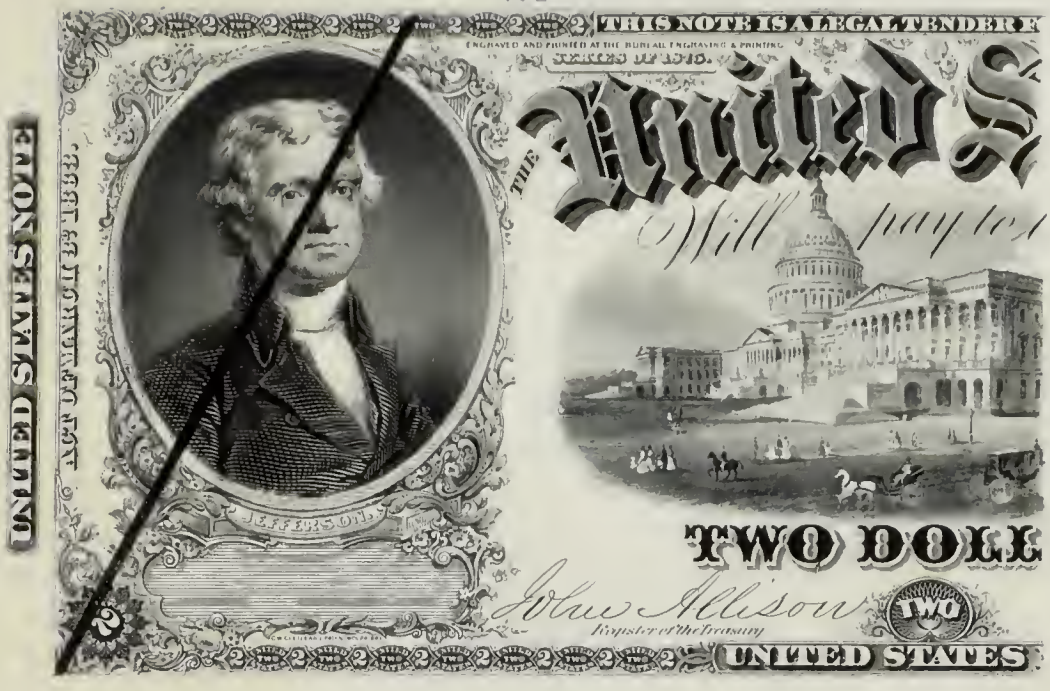
Pl 2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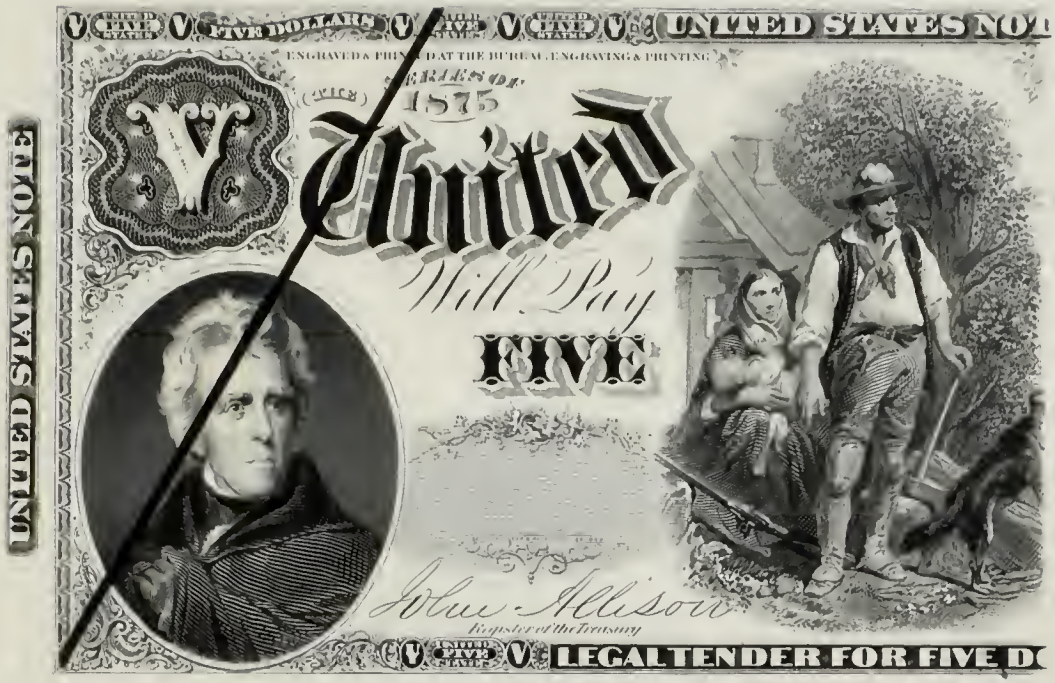
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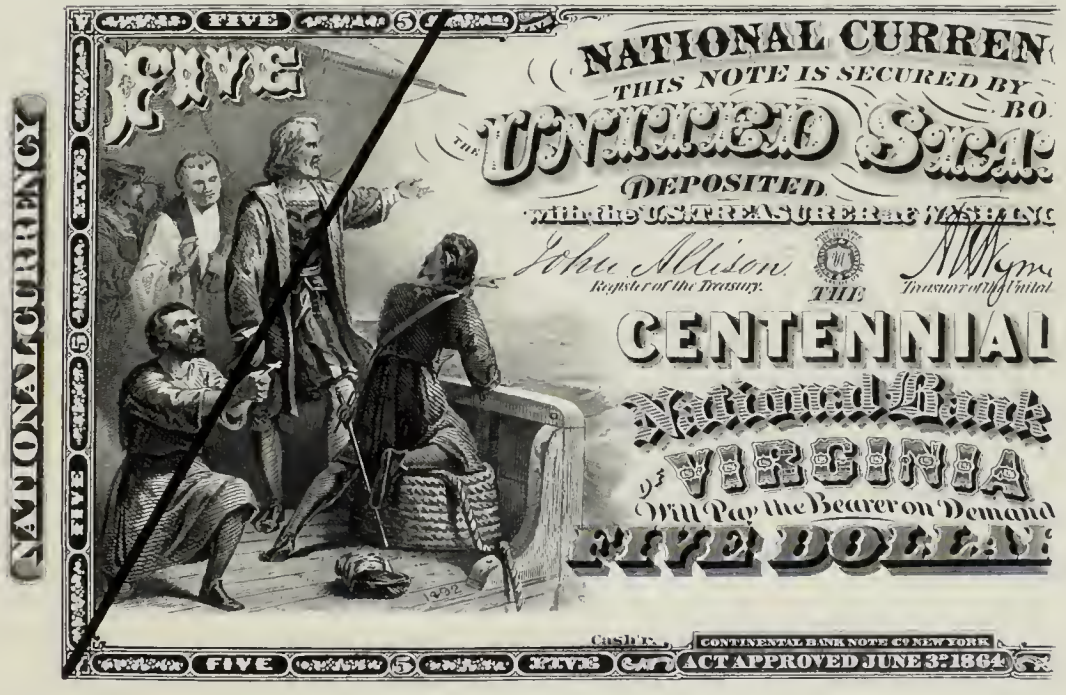
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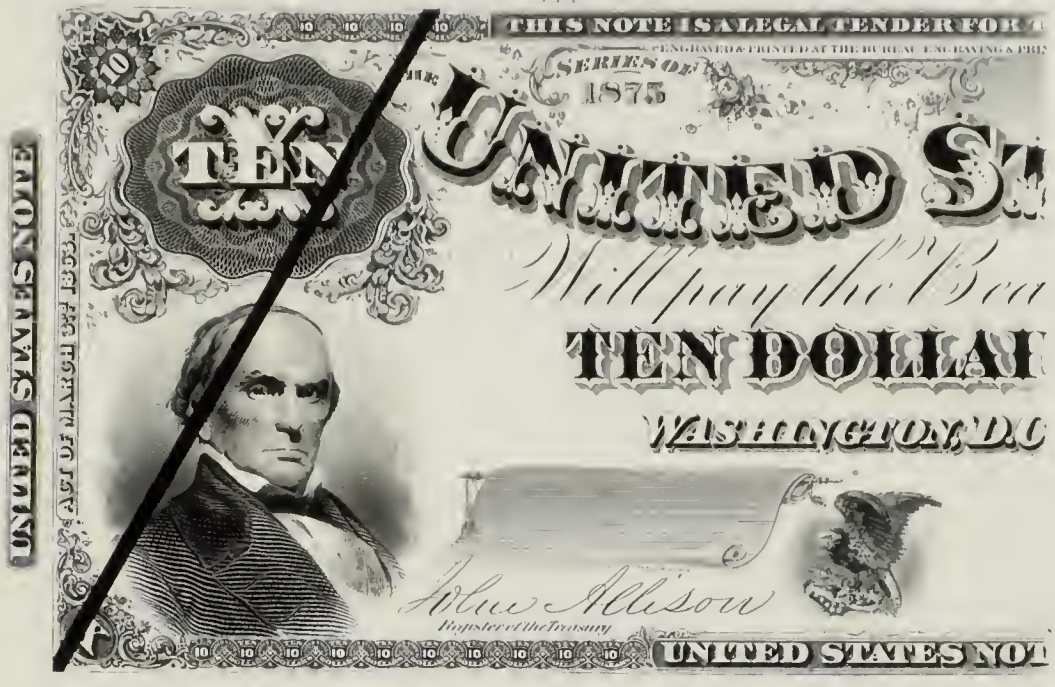
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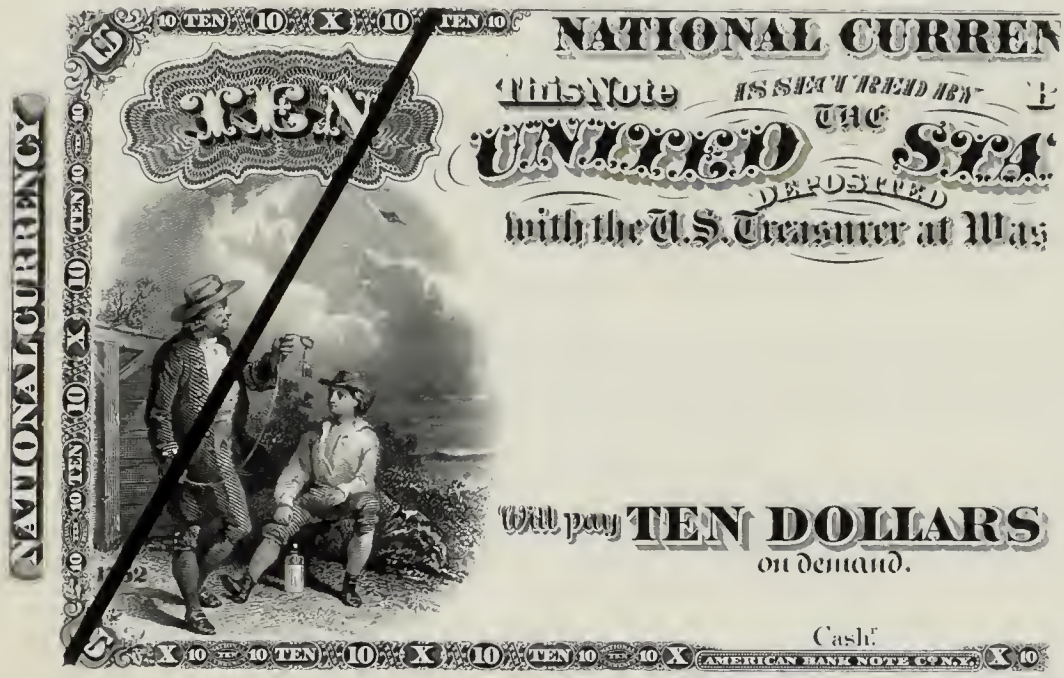
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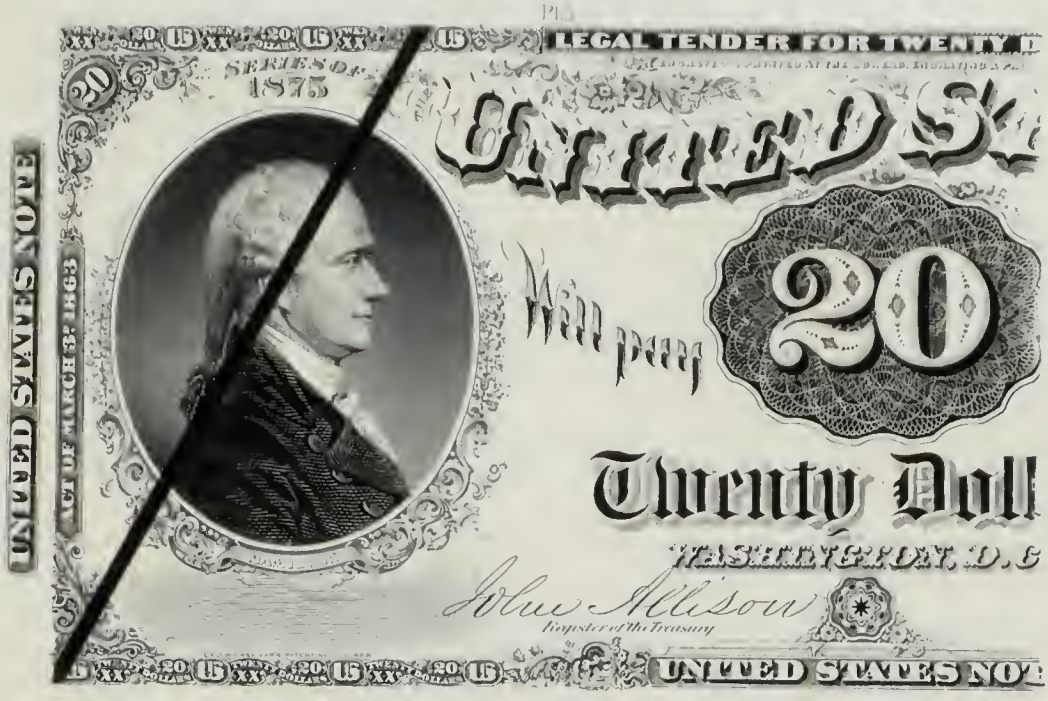
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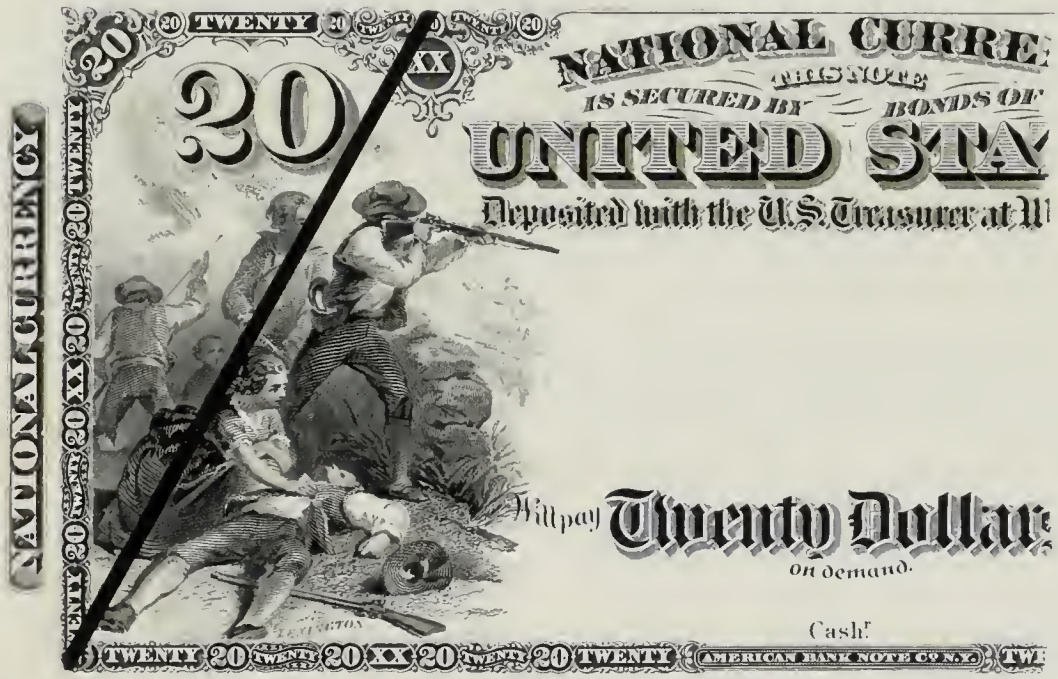
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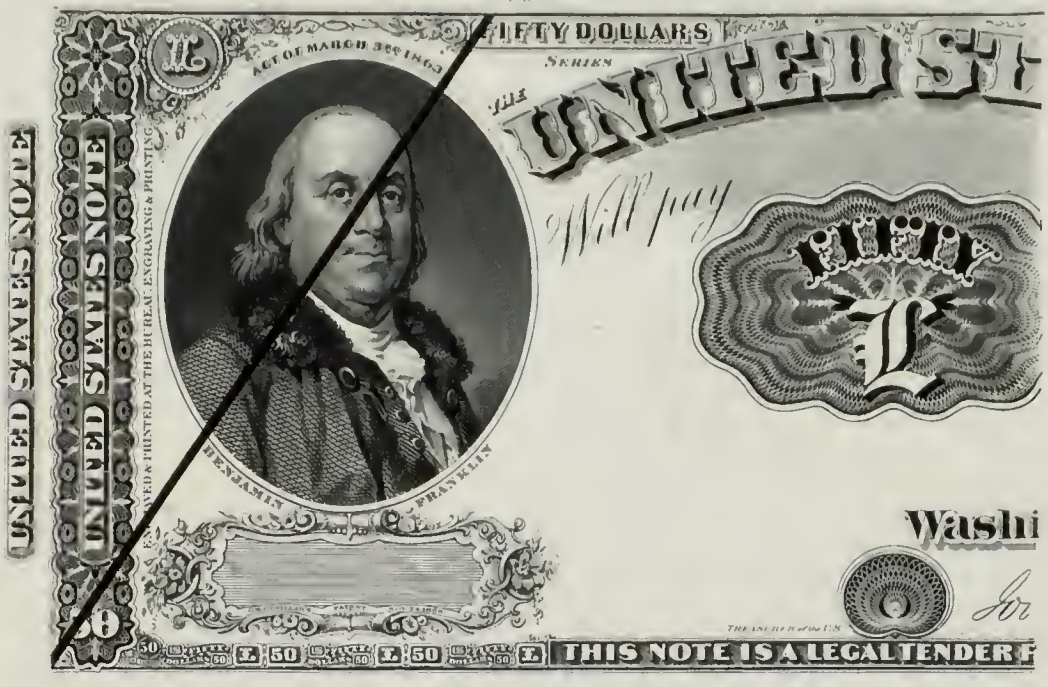
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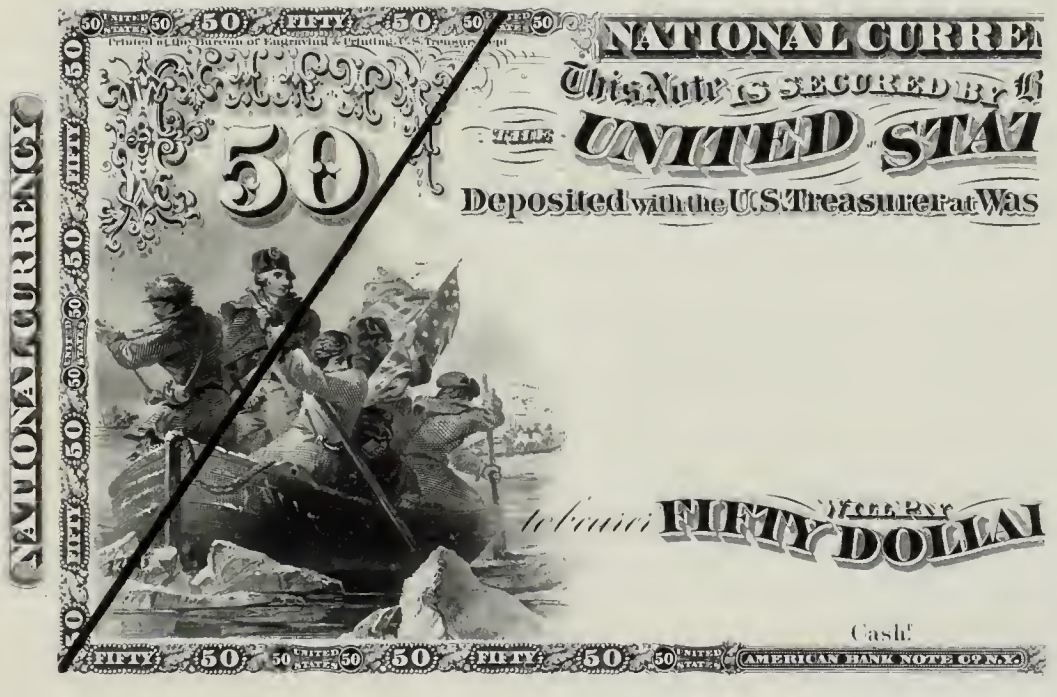
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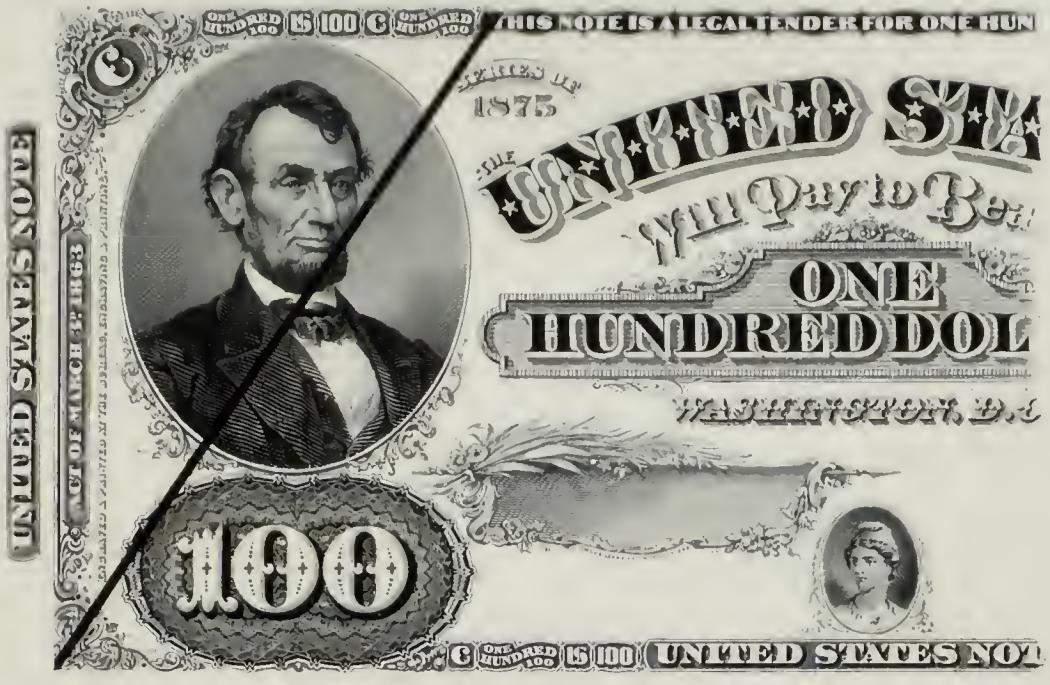
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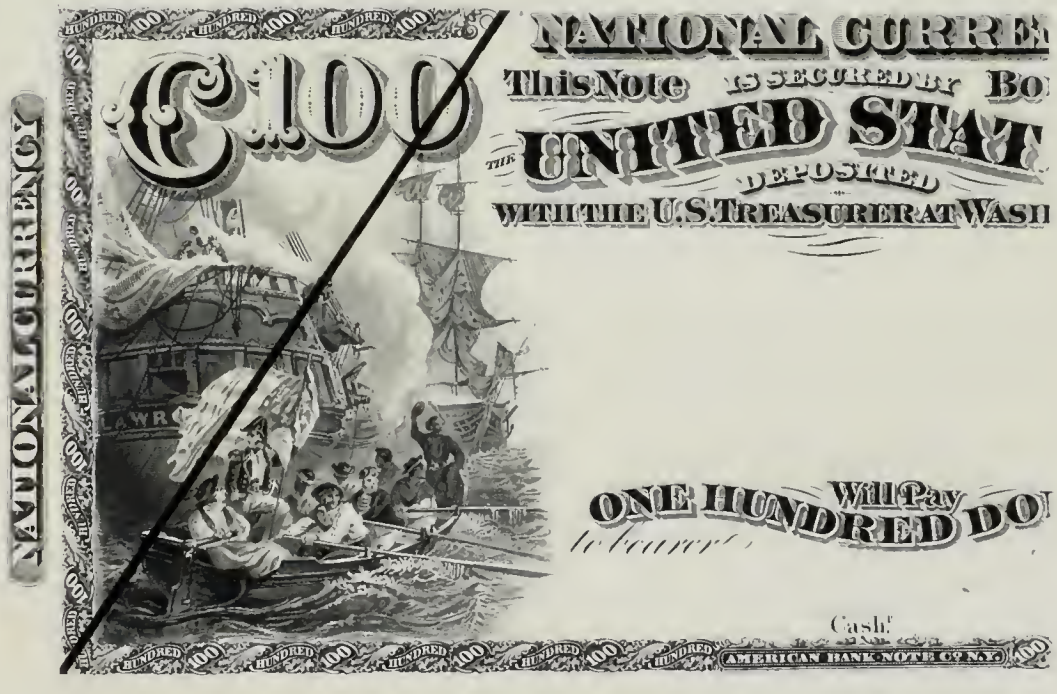
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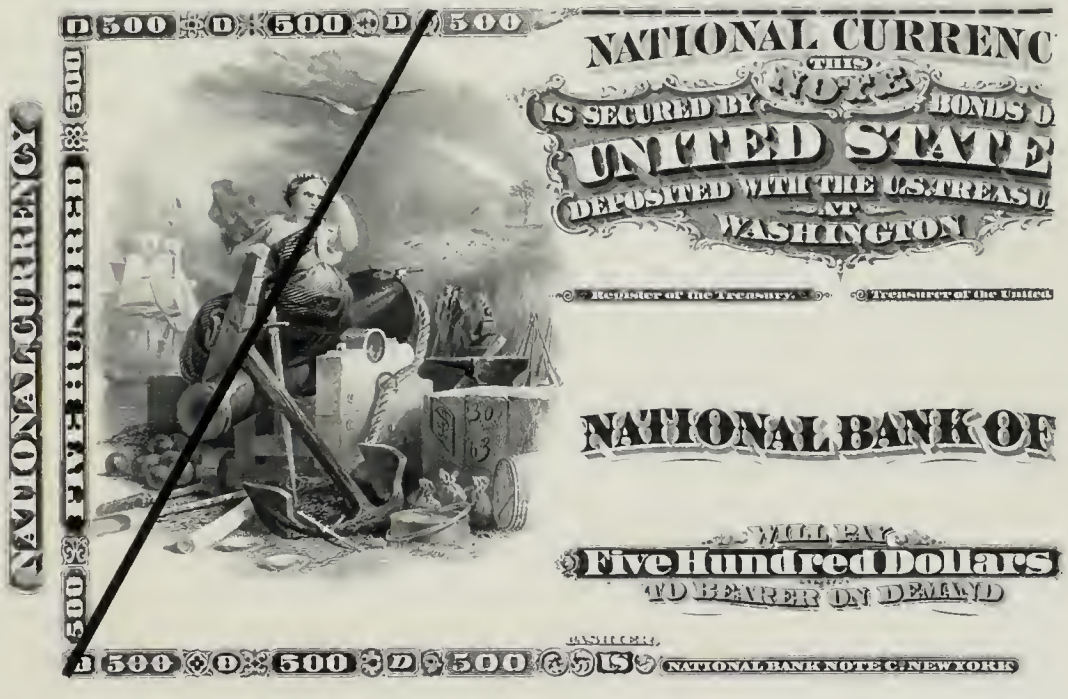
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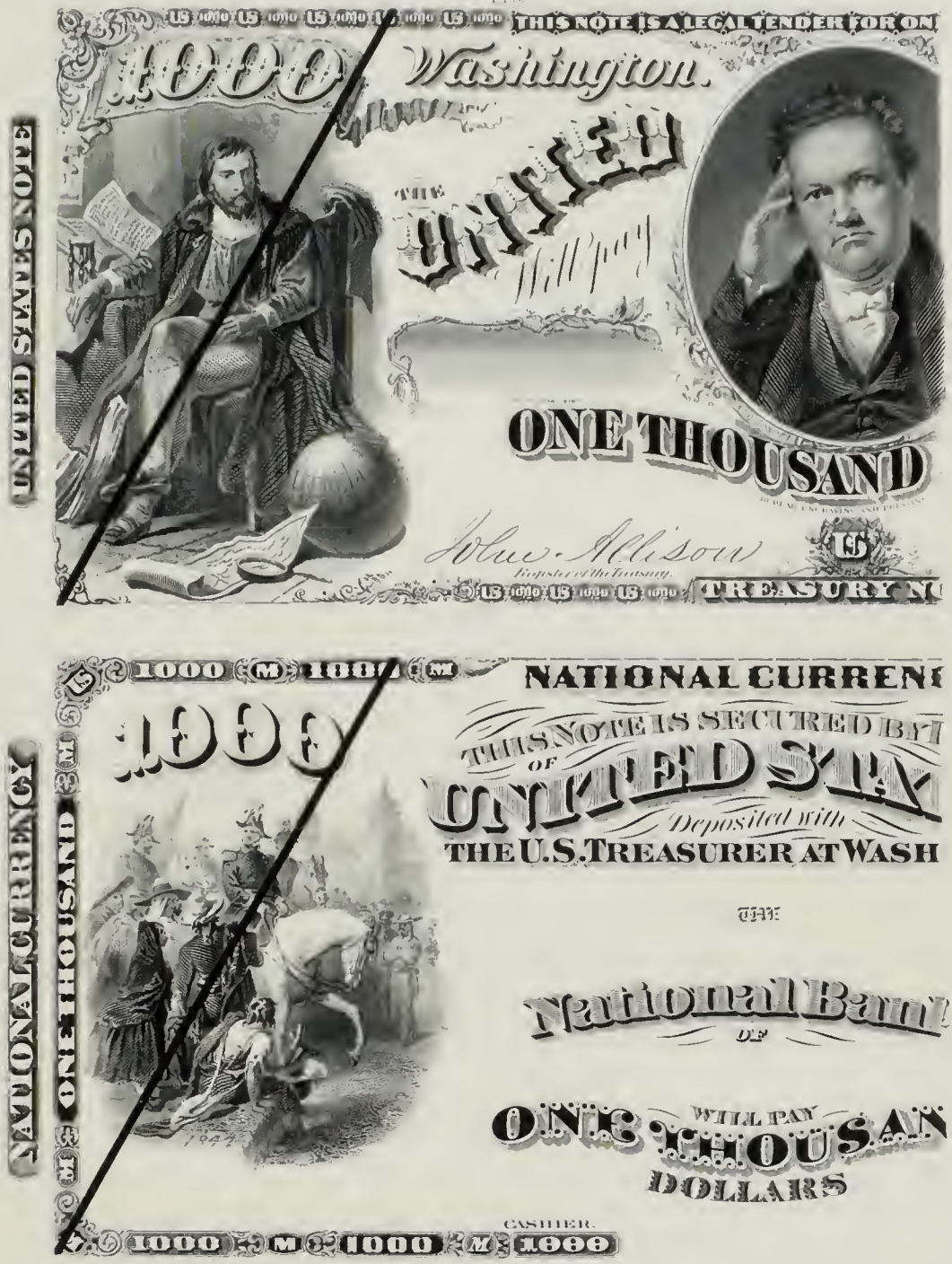
Pl 9.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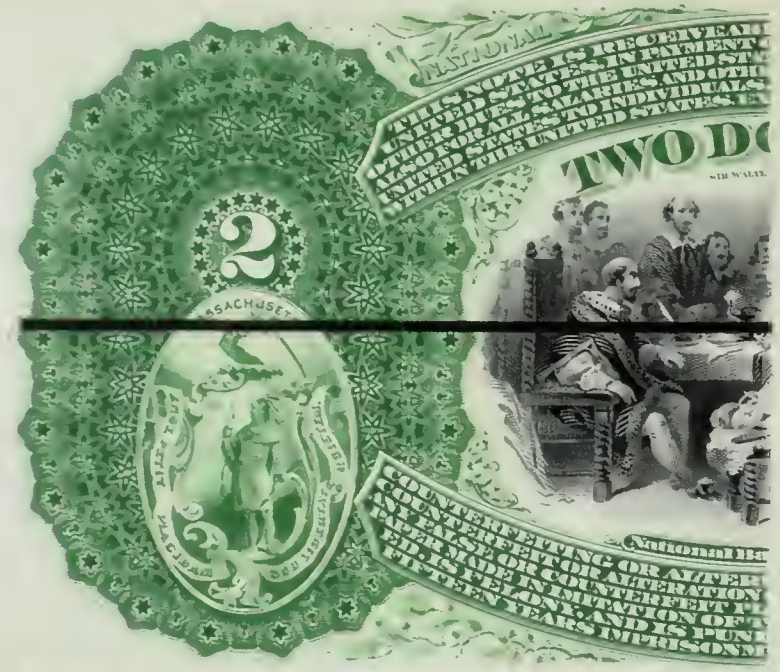
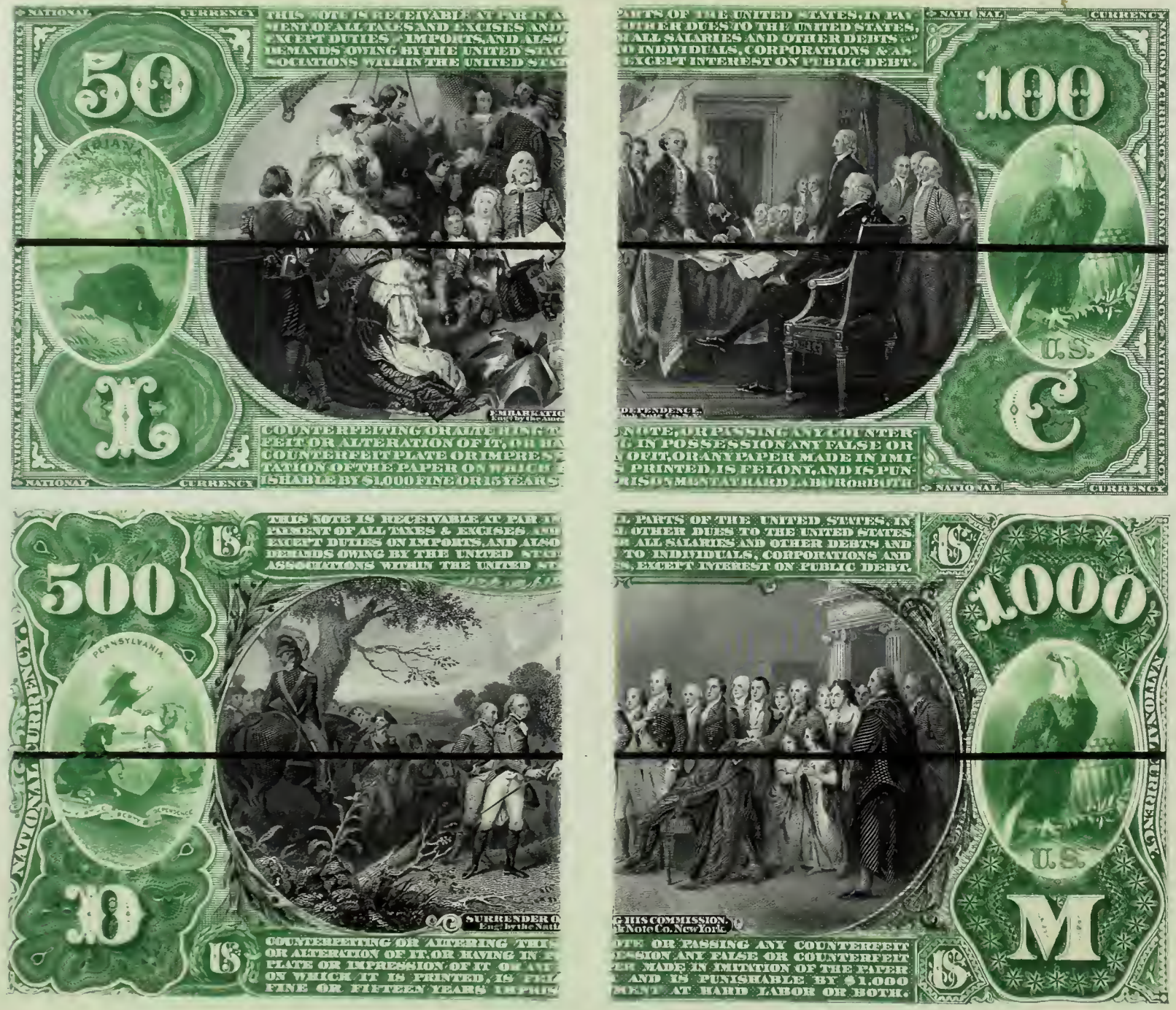
N. C. Reverse Plate 10



N. C. Reverse Plate 11



THE POCKET EDITION.

REVISED AND CORRECTED.

UNITED STATES

Government Counterfeit Detector at Sight.

This edition is illustrated with nearly one-half of the right-hand portion of the United States Greenbacks, together with the National Bank Notes from $1 to $100, inclusive, by authority from the United States Treasury Department; giving a full and complete description of the process of making and printing Bank Notes; treating fully, in detail, of the beautiful Geometrical Lathe work, Ruling Engine work, Vignettes, and solid print; with rules that enable you to discover at once the difference between genuine and counterfeit work, and with directions for the detection of Altered Bank Notes.

TABLE OF CONTENTS.

CHAPTER I. — Process of Engraving and Printing Bank Notes.

CHAPTER II. — Art of Detecting Counterfeits, with Rules for General Guidance — Vignettes — Round Hand — Parallel Ruling and Geometrical Lathe Work.

CHAPTER III. — Genuine Bank Notes.

CHAPTER IV. — Counterfeit Bank Notes — Paper — Ink — Printing — Signatures — Parallel Ruling — Principal Figure and the Human Figure.

CHAPTER V. — Altered Bank Notes.

CHAPTER VI. — Description of United States Treasury and National Bank Notes.

PLATE I.

Plate one represents One Dollar Greenback and National Bank Note.

On the upper corner of the Greenback is a Geometrical Lathe counter, with the figure "1" and "one" across it.

On the National is an incised oval lathe work counter displaying white "1"

PLATE II.

Plate two represents Two Dollar Greenback and National Bank Note.

On upper corner of the Greenback is a circular counter of lathe work, with large "2."

On the National, in upper half of note, is an elongated "2," composed of lathe work, with white lettering in upper portion.

PLATE III.

Plate three represents Five Dollar Greenback and National Bank Note.

On the Greenback, in upper corner, is a heart-shaped counter of lathe work, with white "5."

On the National is a vignette representing Columbus introducing America to Europe, Asia and Africa.

PLATE IV.

Plate four represents Ten Dollar Greenback and National Bank Note.

On the lower corner of the Greenback is vignette representing Columbus presenting the newly-found America to her sisters of Europe, Asia and Africa, or otherwise called the introduction of the New World to the Old.

On the National is vignette representing a female on an eagle, soaring above the clouds, snatching the lightning, which is intended to represent the Genius of America seizing and utilizing the lightning of heaven.

PLATE V.

Plate five represents Twenty Dollar Greenback and National Bank Note.

On the Greenback is vignette, the "Genius of Liberty," holding in her left hand the staff with the Cap of Liberty, and covering herself with the impenetrable shield.

On the National is vignette representing the "Genius of Liberty" unfurling

the American Flag, exciting the loyalty and enthusiasm of the workmen of the nation to the defence and preservation of the Union.

PLATE VI.

Plate six represents Fifty Dollar Greenback and National Bank Note.

On the Greenback the vignette represents America resting on her buckler or shield, on which is embossed the national eagle bearing the striped shield, clutching in one claw the olive-branch of peace, in the other the arrows of defence. The head of this emblematic figure bears a jewelled circlet of stars representing the thirteen original states, with the motto "E Pluribus Unum." A belt of armor passes over her left shoulder, and she holds in her right hand a sword, completing, with the shield, her arms, offensive and defensive.

On the National the vignette represents a soldier of the Revolution of 1776 on picket duty. He sees in a vision the future glory of his country typified by the union of Liberty and Justice with Victory, represented by the three females in mid-air, with "Victory" crowning the whole.

PLATE VII.

Plate seven represents One Hundred Dollar Greenback and National Bank Note.

On the Greenback the vignette represents "Architecture;" the goddess is crowned with a diadem of stars. She is girded with symbolic strip of what seems to be our national emblem, and is squaring the blocks of construction, which conveys the idea of "Reconstruction." In the background is an unfinished temple, indicating that all the material is not yet gathered which is to complete the great American Temple of the Republic. A young student appears to be pondering over the problem of the rise and spread of the thirteen original stars.

On the National the vignette is an angel, with coronet on which is "Liberty;" a large star forms a brooch, clasping her drapery; her hands are extended towards fasces planted on a rock and entwined by wreaths and belts, the latter bearing "The Union," and "Maintain it" at the right, in a burst of sunlight. The whole is designed to represent the Genius of America invoking the aid of Heaven to maintain and preserve the Union.

☞ SEND FOR CIRCULAR.

LABAN HEATH & CO.,

30 & 48 Hanover Street, Boston, Mas

Recommendations from Members of Congress.

U. S. House of Representatives,
Washington, D. C.

The undersigned, having examined the Proof Sheets and Plates of Heath's "Government Detector," concur in the utility of his system, and cheerfully recommend his work.

Hiram Price, President State Bank, Iowa, M. C., 2d Dist., Iowa.
J. B. Grinnell, M. C., 4th Dist., Iowa.
T. W. Ferry, Banker, and M. C., 2d Dist., Michigan.
Charles Upsom, M. C., 2d Dist., Michigan.
Columbus Deleno, President 1st National Bank, Mount Vernon, and M. C., 13th Dist., Ohio.
James M. Ashley, M. C., 10th Dist., Ohio.
Francis C. LeBlond, M. C., 5th Dist., Ohio.
Sidney Clark, M. C., Kansas.
Delos R. Ashley, M. C., Nevada.
Thomas N. Stillwell, Cashier 1st National Bank of Anderson, and M. C., 11th Dist., Indiana.
Godlove S. Orth, M. C., 8th Dist., Indiana.
Shelby M. Cullum, M. C., 8th Dist., Illinois.
John Wentworth, M. C., 1st Dist., Illinois.
General H. E. Paine, M. C., 1st Dist., Wisconsin.
Philetus Sawyer, M. C., 5th Dist., Wisconsin.

Henry T. Blow, M. C., 2d Dist., Missouri.
John Hogan, M. C., 1st Dist., Missouri.
George W. Anderson, M. C., 9th Dist., Missouri.
Ignatius Donnelly, M. C., 2d Dist., Minnesota.
Adam J. Glossbrenner, M. C., 15th Dist., Pennsylvania.
Myers Strouse, M. C., 10th Dist., Pennsylvania.
George V. Lawrence, M. C., 24th Dist., Pennsylvania.
Edmund Cooper, M. C., 4th Dist., Tennessee.
Samuel McKee, M. C. 9th Dist., Kentucky.
General Lovell H. Rosseau, M. C., 5th Dist., Kentucky.
Charles E. Phelps, M. C., 3d Dist., Maryland.
John L. Thomas, M. C., 2d Dist., Maryland.
John A. Nicholson, M. C., Dover, Delaware.
George Latham, M. C., 2d Dist., Western Virginia.
John F. Starr, M. C., 1st Dist., New Jersey.
William A. Newell, M. C., 2d Dist., New Jersey.
John H. D. Henderson, M. C., Oregon.
D. C. McRuer, M. C., California.
Theodore M. Pomeroy, M. C., 24th Dist., N. Y., and Chairman Com. on Banking and Currency.
William E. Dodge, M. C., 8th Dist., New York.
Daniel Morris M. C., 25th Dist., New York.
John A. Griswold, President Troy City National Bank, and M. C., 15th Dist., New York.
Calvin T. Hulburd, M. C., 17th Dist., New York.
Hamilton Ward, M. C., 27th Dist., New York.
Henry C. Deming, M. C., 1st Dist., Connecticut.
Augustus Bandegee, M. C., 3d Dist., Connecticut.
James G. Blaine, M. C., 3d Dist., Maine.
Thomas A. Jencks, M. C., 1st Dist., Rhode Island.
James W. Patterson, M. C., 3d Dist., New Hampshire.
Edward H. Rollins, M. C., 2d Dist., New Hampshire.

Portus Baxter,	M. C.,	3d Dist.,	Vermont.	
P. W. Hitchcock,	Delegate	in Congress,		Nebraska.
W. H. Hooper,	"	"	"	Utah.
Arthur H. Denny,	"	"	"	Ter'y of Washington.
Samuel McLean,	"	"	"	Montana.
J. F. Chaves,	"	"	"	New Mexico.
John N. Goodwin,	"	"	"	Arizona.

TO BANKS AND BANKERS.

"Heath's Infallible Counterfeit Detector," containing an entire set of the new issue of Greenbacks, with the National Currency Notes, is just published by authority of the United States Treasury Department, and I take pleasure in saying that I consider it a work indispensable to every Banking and Counting House in the country.

CHAS. B. HALL,

Secretary of the Association of Banks for the Suppression of Counterfeiting.

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Late Sergeant-at-Arms, U. S. House of Representatives.

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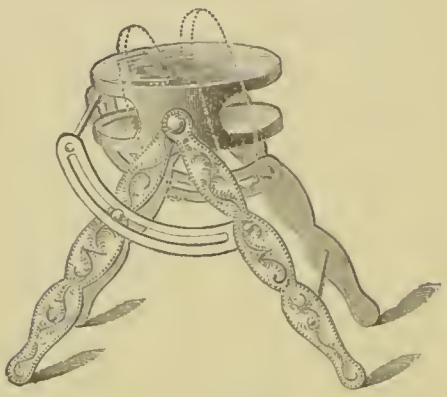

Cut No. 1, showing Glass open.
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